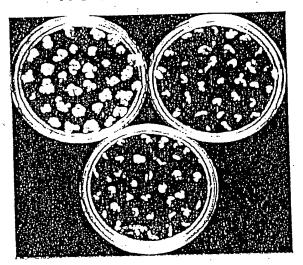
Fig). 1A

Ws

rat5



F1 (Ws x *rat5*)

1200 1280 1360 1440 1040 320 480 560 640 800 880 240 400 960 TGCCCTAAAACCTAAAACCAACAACAACCATCATTTCGACCACCACCACTTGACTGGTCTGCCCCAATCTAGCTATGATA STAATTCATCAAATTTATATAGTGATAAAATTCCACAATGGTTGTTCAATAAAAATATGAACAACACAATAGAATTAGTA aaagtgactatgttaaatcattttcttcgctggggtttggtggggcgagttctaaacccataagggggcccatttactt aaactcaattcgatttgttcagcgttccaagcccataatatttttcaagggcataaattaaattgaggtttatgtggg adatttggadattccctcgtccagaagaaccaacaaaactgcaaaaagttcaagcggtgggagaaaacttcagatc TCCTCCA CATATATAA CAA CAA TCAGA TTTCTCTCTGTTAA TTTCGTCAAGAA AAAA TTGGA TTTTTGCGCTCTTTG gcaaa*gccggtcttcaatttcccggtggtcgtatcgctcgttttcttaaaagccggtaaatacgcgaacgtgttggtgcc* GGTGCTCCGGTTTATCTCGCCGCCGTTCTCGAATATTTGGCCGCCGAGGTAAAATTACATCGTCTTTTCTCTCTTTTCCCA **SATTGGTTGATGGTAATCGAGATCATATGAATCGTTGTAGTTTTCTCGCAAGATTCTAAATTTTTTCAATTATGGTAAC** CAATTTGATTTGAGTTGTTAAAGTTCTCAAATTTGGAAAGTTTGATCATGAATTGTGTGTTTTGAATTTGTTCAG*GTTCT* tgaattagctggaaacgcaagcaagacaacaagaagacacgtattgttcctcgtcacattcagcttgcggtcagaaacg ICAAAAGGAAAGACATTAAATTAGAAATTGAATTTTGAAACATGTTGATAGATCATGTCCTTCTTCTGGGTTACCCAGTT ATCTTAATTTCCGTATGACTTGGATCCATAAATATTGAAATAGATTTGGTGAACACAAAATTACTCTTAAAACTTCTTCT GTAGCCATTCATTAAATTATAATCAACGGTTTAAACCTCTTCGATCCGCGTACTCTATTCCTTATGGTCAAATAACTTAA TTCCGTTTCCGATCTTATTCGTCTGACTCTGTTTTTGCGTGATCGATTACGAATCTAGGGTTCTTACATTTTCCGAATTT GACATGCAAAAATTGAATTAGATTCGTGTTTTGAATTGAATTGTTGTAGTTCTGTAATTGGACCTAATTTTGGGTTTTGTTCT I TGA GGA GCTAA GCAA GCTTCTTGGA GA TGTGA CGA TTGCTAA TGGA GGA GTGA TGCCTAA CA TCCA CAA TCTCCTTCTC *CTAAGAAGGCTGGTGCTTCAAAGCCTCAGGAAGAT*TTAGGTCTTTTAACACAATGATATAGAACACGTCTCTTTTGCA ITTTTCAGGATATATTGTGGTGTAAACAAATTGACGCTTAGACAACTTAATAACACATTGCGGAGGTTTTTTAATGTACTG

Open reading frame

1520

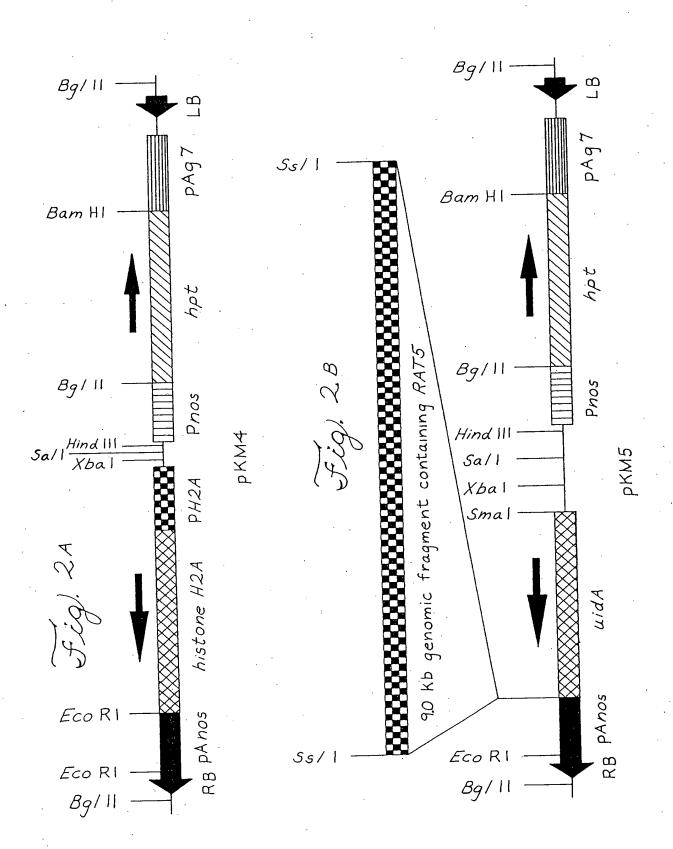
1120

-Intron Bold

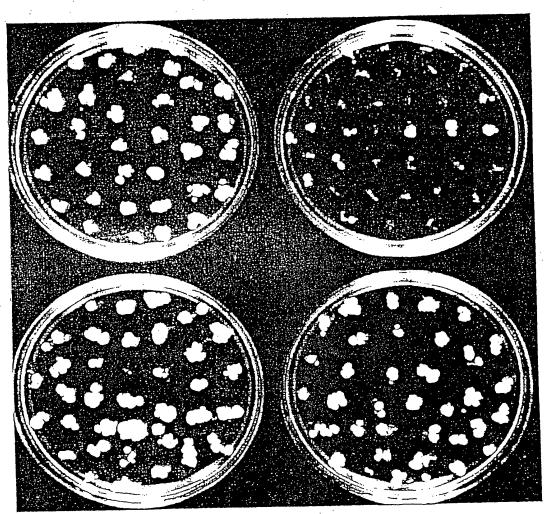
sednence T-DNA LB

nsertion site

,			-
	6.6 kb Eco RI Sa/I Hin dIII	┤``	
1 1c	Ecori S	7.2kb 2.3kb	
130	EORI EcoRI HindIII S LB DBR322	3.0kb 9.7kb	
	6.6kb Ecori Sa/I HindIII DBR322 RB	4.3kb	·
	T.2Kb Eco RI Hin d III Sa/I Sa/I Ec	1.2Kb 2.3K	
	8	3.0 Kb	
	Sa/I Plant DNA	6.6 KD	

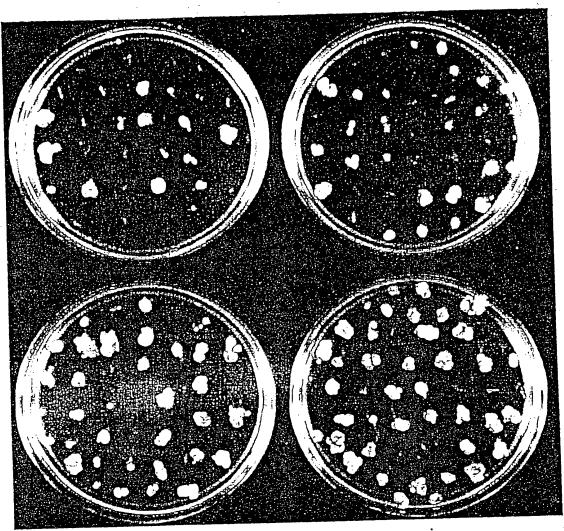


rat5



Transgenic *rat5* plants expressing the *RAT5* histone H2A gene

Ws .



Transgenic Ws plants overexpressing the *RAT5* histone H2A gene

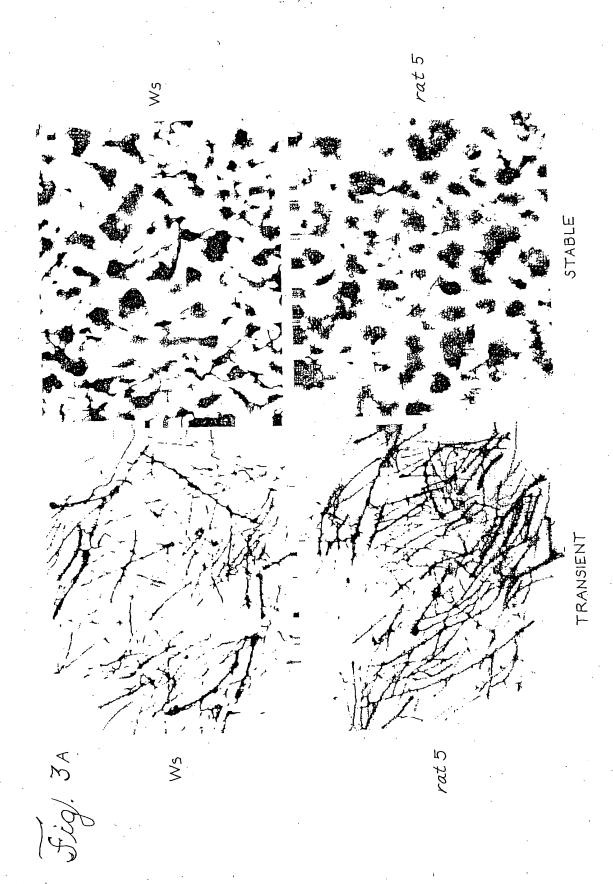


Fig). 3B

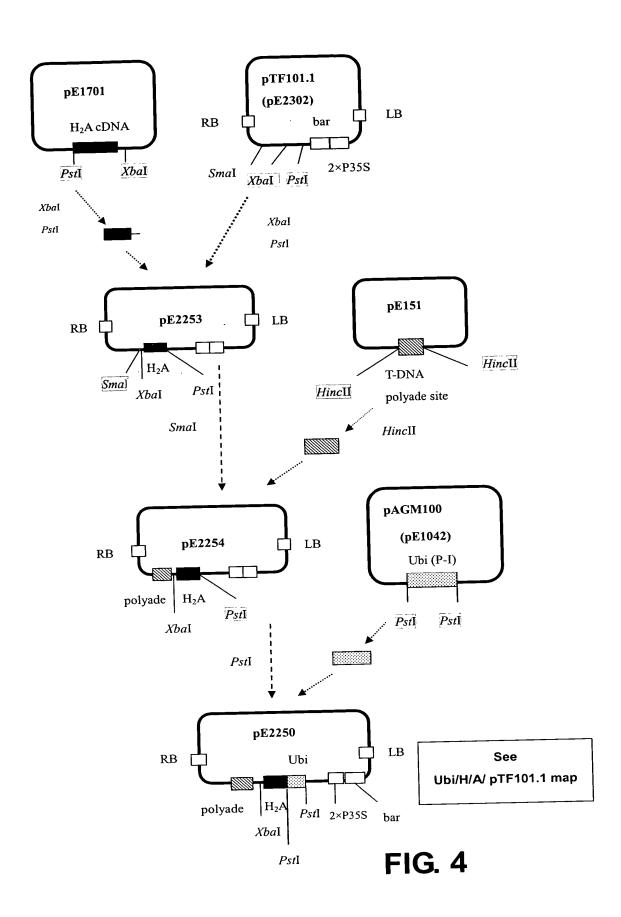
rat5 Ws

rat5 Ws

23 kbp

gusA Gene

PAL Gene



Line # 1 2 3 4 5 6 7 8 10 9

+ + + +

r-DNA

→ maize lines A10 (transgenic for E2250)

FIG. 5

HTA1-C

GAAGGCTGGT CGTCTCTCTT GTATCTTTGC	CGTGGAAAAA GGTCTTCAAT CGTGTTGGTG GTTCTTGAAT CACATTCAGC ATTGCTAATG GCTTCAAAGC TTGGCTTTAG TTTTTTTAAT	CTCTTGGATC TCCCGGTGGG CCGGTGCTCC TAGCTGGAAA TTGCGGTCAG GAGGAGTGAT CTCAGGAAGA ATCTAATAAC TCCTTTAGGG	CGGTGGGGCG TCGTATCGCT GGTTTATCTC CGCAGCAAGA AAACGATGAG GCCTAACATC TTAGGTCTTT CTAATAACTA ATTTGTTTCT	CGTTTCTTAA GCCGCCGTTC GACAACAAGA GAGCTAAGCA CACAATCTCC TAACACAATG GCTAGATGTT	AAGCCGGTAA TCGAATATTT AGACACGTAT AGCTTCTTGG TTCTCCCTAA
GTTGTTTCTG		TATATGAAAG	TATTTTGC		

HTA2-C

				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	псттссстас
CACAAATTTC	TCAGTTACGC	TTCATCCTCC	TCTAAGAGAT	CTTTTTCTA	ICTIGGGIAG
TAGAGAGAAA	magaggggTCC	CCCAAAACAA	CTTGGATCTG	GIGCAGCGAA	Grand a Carre
	100000		CCTGTTGGTC	GTATCGCTCG	ATTTTTGAAA
TCTCGTAGTA	GCAAGGCTGG	TGTTGGTGCC	CCACCTCCGG	TCTATCTCGC	CGCCGTTCTT
GCCGGTAAGT	ACGCCGAGCG	TGTTGGTGCC	GGAGCICCCC	CACCCACACA	CAACAAGAAG
GAATACCTCG	CCGCTGAGGT	ACTTGAGCTT	GCTGGGAACG	CAGCGAGAGA	COMPACCAAC
	mmaaa acaaca	CATTCAGCTT	GCTGTGAGGA	ATGATGAGGA	GCIAAGCIAIG
	3 mama 3 d 3 3 m	TCCTAATGGA	GGAGTGATGC	CTAACATCCA	CMMICICOLI
TTGCTTGGAG	AIGIGACAAI	ATCTAAGCCT	ACTGAAGAAG	<b>ATTAG</b> GTTCA	TTACGAAGAT
CTCCCCAAGA	AGGCTGGTTC	ATCTAAGCCT	TO DESCRIPTION C	C Ջ դեռ Сւեւ գեր դեր դե	TTTTTCATTT
AGGGAAAGCT	GGAAACTGGT	TGATATCAGA	TAATGCTTAG	GATIGITIT	
	TGCAGCAATG		GGTTGTACTA	GTTGTTAAGG	TIACCITIGI
GCITICCIC	CTCAATATAT	GAAGAAATTG	TTCTATTTC		
TTCACTTTAT	GIGAAIAIAI	O. E. C. HELL I	_		

# <u> HTA3-C</u>

AAATTTCCCG AGAGGAAAGC CCCGTTGGAA GGTGCTCCCG GCTGGAAATG GCAGTGAGA GGAGTTTTGC GATATCGGAT GCTCTCTGTT CCAGTAATGA ATTCAATGGC	ATAAACAAAA CAAAAGCTAC GAATCGCTAG TTTATCTCTC CAGCAAGAGA ACGATGAAGA CCAACATTCA CTGCTTCTCA CCACAATAGT ATTCGGTTTG	CGCCGTTCTC TAACAAGAAG GCTTAGTAAA TCAGACTCTT AGAGTTTTAA TTTGGTATTT AAGAAGTGAA GTGCTAATAG	GGCGCCGGCA TCTCGATCTT GCCGGTAAAT GAATACCTCG ACACGTATCG CTTCTTGGAA CTCCCATCAA TTTTATTTT TCATGTTACT ATAGTTAAAT GTTTGGCTTT	GTGGAACAC CTAAAGCTGG ACGCCGAACG CCGCTGAGGT TACCACGGCA GTGTAACAAT AGGTTGGAAA TAGCTTGTAA CAAAAACTGT TTGATGTGTT AGCCATGGTT	TAMAGGIGGC TCTTCAATTT TGTTGGTGCC ATTGGAGCTA CATTCAGCTT TGCTAATGGA GAACAAAGGC CATAGACATG GTTTGCAAAT
	TTCTTTGTGA	GAATGTAATA	ATGAGACAGT	GTTGGAAACA	GCCCATTTGA

FIG. 6(A)

# HTA4-C

ATGGTGTGCA	ACACGAATAT	ACTAAAAGAT	GTGTCGACGA	AGATAAGTGC	TTTTGAAAAT
ammagaa maa	$mm \lambda mCCTCC\Delta$	GGGAGAGATG	TTTCAAGTGG	CTCGTATTCA	CAAGCAACII
AAGAACAGAG	mmmcmccaca	тастастстт	GGTGCGACTG	ATGTTGTCTA	CATGACTTCA
AAGAACAGAG ATCCTTGAAT	TTTCTGCACA	INGINGIGII	CACTTGGCCG	AAACACTAG	CAAAGATTTA
ATCCTTGAAT	ACCTAACTAC	AGAGGTTCTT	CAGIIGGCCO	TCAGAGGAGA	TGAAGAGCTT
AAAGTGAAGA	GGATAACTCC	AAGGCATTTG	CAGTTGGCGA	TCAGAGGAGA	CCACTAG
GACACACTCA	TCAAAGGAAC	AATTATTGGA	GGAAGTGTGA	TCCCTCACAI	CCACIAG

# HTA5-C

# HTA6-C

ATCGATAACC ACCACTGGT CCCAGTGGGA TGGTGCTCCG TGCTGGTAAC CGCGATAAGG TGGTGTTTTG TGAAGAAAAG TTTCGTTGCT	GCCCCAAAAA AGAATCACTC GTTTACATGG GCTGCGAGAG AACGATGAAG CCTAACATCA GCTACCAAAT AGTTTGTGTT	AATCCACCGG CCAAATCGGT GTTTCCTGAA CCGCCGTTCT ATAACAAGAA AATTGGGGAA ACTCTGTTCT CACCAGTCAA TGAGCTCTGG	AAAAGTGAAG TTCGAAATCG GAAAGGACGA TGAATACCTC ATCAAGGATA ACTTCTGAGT ATTGCCTAAG GTCTCCAAAG TGAATGTAGA	AAAGCTTTCG ATGAAAGCCG TACGCTCAGA GCCGCAGAAG ATTCCGAGGC GGTGTCACAA AAGTCTGCCA AAAGCTTAAT AATTTGAAGC	GAGGAAGAAA GTCTTCAATT GACTTGGTGG TTCTGGAGCT ATCTTCTTCT TCGCTCACGG CTAAACCAGC CTGCTAGAGT TTTTGGATCT
TTTCGTTGCT	AGTTTGTGTT	TGAGCTCTGG	TGAATGTAGA	AATTTGAAGC	TTTTGGATCT
TAGTTTCTAT	GTATTTGGTG	ATTTAGAATG	TTGTTCAAAA	TCCTTTTCCT	

# <u> HTA7-C</u>

$\alpha$ $\lambda$ $\lambda$ $\alpha$	ACCGCCACAA	AACCGAAAAA	AACACTAATT	GTGCTTTCCC	TTTAGATTCA
CAAAICGIAA	CTTTTGGAGC	TTTTTCDDT===	TGGAGTCATC	ACAAGCAACG	ACGAAGCCAA
				GAGTGTTAGT	AAATCTGTTA
CGAGAGGAGC	AGGAGGAAGG				
AAGCTGGTCT	TCAATTTCCC	GTTGGTCGTA	TCGCTCGTTA	CIIGAAGAAA	ma coma coco
CTCTCCGATA	CGGTTCCGGT	GCTCCGGTTT	ACCTCGCCGC	CGTTCTCGAA	TACCTAGCCG
CCCACCTACT	TCACCTACCT	GGGAACGCAG	CGAGAGATAA	TAAGAAGAAC	AGGATAAACC
			ATGAGGAATT	GGGGAGATTG	CTTCATGGAG
•			አ ር አ ምጥ አ አ ጥር ር	AGTTCTTCTT	CCTAAGAAAT
TTACTATTGC	TAGTGGTGGT	GTTCTTCCAA	ACATTANTCC	CARAMORCOT	AAGAAGGCTT
CAACAGCTTC	TTCTTCTCAA	GCGGAGAAAG	CTTCTGCTAC	CAAATCICCI	AAGAAGGEI
	AGTATCGATG		GTTATATTCG	GATCTTAGAT	GAAGAAGAAG
	AACAACTTGT		AGAGGATTTG	TGTAGGTATC	TGAAATCTTC
			AACCATGGGA	AGATGATTAT	GTTTGTTAAC
TTCTCTTTGT	TTTGGTTTGT				
GCAATTTGTA	ATGGAAAATA	ATTAAGTTCT	GGGATTAGT		

FIG. 6(B)

# HTA8-C

					CGAATAGGTT
AATTCGACGT	CTCTCTTTTG	TCTCTGTATC	GATTTTCTCG	CCGCGAATTI	CUARTROOT
	$\mathbf{A}$	$CTT\DeltaTTTCTC$	TACTGTTCTT	IGCLICITOR	CIMICOITIE
CITCACCATA	ACCITOTION.	GGCTTCTAGC	TGCGAAGACG	ACGGCAGCAG	CTGCAAACAA
GGCTGGTAAA	GGTGGGAAAG	CCATCTCTCG	CHCHTCTCCT	CCTGGTATTC	AGTTTCCAGT
AGACAGTGTT	AAGAAGAAAT	CCATCTCTCG	CICIICICGI	CAMCCAACAC	TTCCTCCCAC
GGGTCGTATT	CATCGTCAAC	TCAAGCAAAG	AGTTTCAGCA	CATGGAAGAG	TIGGICCIIC
	TO A STORE OF THE	CAATTCTAGA	ATACTTGACT	GCTGAAGTAC	ICGAGIINGC
TGCTGCTGTT	A COLA COLOUR	TCAAAGTGAA	GAGAATTACA	CCAAGACATT	TGCAGCTTGC
TGGAAATGCG	AGCAAGGAIC	TTGACACTCT	CAMCAAAGGA	ACCATTGCAG	GAGGAGGTGT
AATCAGAGGA	GATGAGGAAC	TTGACACTCT	CAICAAAGGA	A COMPTONO	<b>ጥጥርርርጥርጥር</b>
CATCCCTCAC	ATCCACAAGT	CCCTTGTCAA	CAAAGTCACC	AAGGATIGAG	277777777
	$\alpha m \alpha m \alpha m \lambda m m \lambda$	$T\Delta CT\Delta TGTGC$	TCTTTTCTAG	ACGCCCICAL	01011111100
TGAGTCCTAA	GICICIATIN	CTCTCGTTTT	AGACTCATAC	TCTTGTTATT	TTGCTAATGC
GTTCATTGTA	TCTCTTAGGT	CICICGIIII	AOAC I CITITIO		
TTACATGATT	GAGG				

# HTA9-C

GGGAAAGGTG CTAAGAAGAAGA CAAGAAGGACT TGATGAGGAGG TCATCCACAAGA GTATCCACAAGA GTATCCACACAGA GTATCCACACAGA GTATCCACACAGA GTATCCACACAGA GTATCCACAGA GTATCCACACAGA GTATCCACACACACACACACACACACACACACACACACAC	AAAGGTTT GATTATGGGG ATCACTCG TTCTTCTCGA	TACTGTGAGA AAACCCAGCG CATGGAAGGG CATGGAAGGTT CCGAGGCATT ACTATAGCTG AAGGAATAGG GTTTTTAAGA TTGTTCGTTC	TATTTGGCGG GTAGCGACAA AGTTCCCAGT TTGGAGCAAC TGGAGTTGGC TGCAGCTTGC GTGTGGAGT ACTTTTTAG GTTGTTGTTT GATCAGCGTA	GGATAAGGAC TGGTAGGGTG TGCAGCTGTT TGGTAACGCC GATTCGTGGA CATCCCTCAT TTACCCGCTT GATAAGATGC CTTTGTGTTA
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FIG. 6(C)

### HTA10-C

CGATTTCAAT CAAGAAGCAG AAGGCAAATA AATACCTCGC CGAGGATTGT TGCTTGGAGA TTCCTAAGAA	GGCGGGTCGT CAAAGCCGGT CGCCGAACGT CGCTGAGGTA TCCAAGGCAT TGTGACTATT GACCGGTGCT	TAACTGTTTC GGTAAAACAC CTCCAATTCC GTTGGTGCCG TTGGAATTGG ATTCAATTGG GCTAATGGAG TCCAAGCCAT GAGTTTTTAA	TCGGATCTGG CTGTGGGTCG GAGCTCCGGT CTGGAAACGC CGGTGAGGAA GTGTGATGCC CTGCTGAAGA GGCTTTTTAA	TATCGCTCGT TTACTTAGCC AGCGAGGGAT CGATGAAGAA TAACATTCAC CGATTGATTA GAGTAATTTA	TTCTTGAAGA GCCGTTCTCG AACAAGAAGA TTGAGCAAAT AATCTTCTTC ATCAACCAAA GATTAGATCT
TCCACTCTCT	TGTGTTTTTT	CTTCTGTGTT	TTTTGAATTG	AATTGAATGT	TCATATGCTT
TCAATTTCTT	ATGGAATCAA	GATTTTAACT	TTTCT		

HTCCTTTTGCAT TCTCTCGTCG TCGTCTCAAG ATCTAGAAGA AGGAAACAAC AATTTCAAGA
GACATGGCAG GCAAAGGTGG AAAAGGACTC GTAGCTGCGA AGACGATGGC TGCTAACAAG
GACAAAGACA AGGACAAGAA GAAACCCATC TCTCGCTCTG CTCGTGCTGG TATTCAGTTT
CCAGTTGGAC GAATTCACAG GCAACTGAAG ACCCGAGTCT CGGCACATGG CAGAGTTGGT
GCCACTGCAG CCGTCTACAC AGCTTCAAAC CTGGAGTATC TGACAGCAAG GGTTCTTGAG
TTGGCGATTA GAGGAGATGA GGATCTCAAA GTGAAGAGGA TAACGCCAAG GCATCTGCAG
GTTGGCGATTA GAGGAGATGA GGAGCTGGAC ACACTCATCA AGGGAACGAT TGCTGGAGGT
GGTGTGATCC CTCACATCCA CAAGTCTCTC ATCAACAAAA CCACCAAGGA GTGATGTTA
GTTCTTTATG GTGTTTGAC CTCTTCTGGA CATCCTCAGG TGTACATTAG TTAATTTGAA
CTCTTTTAGGT TCCTT

# HTA11-C

FIG. 6(D)

# HTA12-C

	CARCOARACT.	GAAGAAAGGA	GCCGCTGGAA	GAAGAAGTGG	TGGAGGTCCT
ATGGATTCCG	GAACCAAAGI	TTCGGTTAAA	magaamama C	አርጥጥጥር'Cጥርጥ	CGGTAGGATC
AAGAAGAAAC	CGGTTTCCCG	TTCGGTTAAA	TUCGGICIAC	AGITICCICI	macacamama T
	mmaacaaacc	TCCTTATTCG	AAGCGTGTCG	GAACCGGAGC	ICCGGICIAL
GGICGGIAIC	TIMIOIDIO	TCTTGCTGCT	GAGGTTCTCG	AGCTTGCTGG	TAACGCTGCA
CTCGCCGCCG	TCCTCGAGTA	TCTTGCTGCT	GAGGIIGIGG	mamma CCCCT	CAGGAACGAC
AGAGATAACA	AAAAGAACCG	TATTATACCA	CGCCATGTTC	TATTAGEGGI	GAGGIZIGGIIG
		CAAACCCCTA	ACCATTGCAC	ACGGCGGTGT	TITACCAAAC
GAGGAGCTAG	GGACACIACI	AAAGAAGTCT	CACAAACCAG	CTTCAACTAC	AAAAACACCC
ATAAACCCAA	TACTCCTCCC	AAAGAAGTCT	GAGAAAGCAG		mamma a mmcc
	CANACCCAAC	CAAATCCCCT	AAGAAATCTT	AGTACTICTI	ICIICHIICO
AAAICACCAI	CHILICOGIATO	TATCTCTCTG	ጥ እርርጥጥጥርጥር	TGTAAAGACA	GAACAGAATA
TCTGTATAAC	CTACTGTTTC	TATCICICIO	IACGITICIO		ͲλλλλλλΤΩΟ
TCTCTTTGTT	GTTGTGAGAA	AGCTTAGTTT	CTCTGATCGT	CGTTGTGAAA	IMMMITTOO
AACGTTTCAT	AΙ				

# HTA13-C

FIG. 6(E)

#### HTA1-P

MAGRGKTLGS GGAKKATSRS SKAGLQFPVG RIARFLKAGK YAERVGAGAP VYLAAVLEYL AAEVLELAGN AARDNKKTRI VPRHIQLAVR NDEELSKLLG DVTIANGGVM PNIHNLLLPK KAGASKPQED

### HTA2-P

MAGRGKQLGS GAAKKSTSRS SKAGLQFPVG RIARFLKAGK YAERVGAGAP VYLAAVLEYL AAEVLELAGN AARDNKKTRI VPRHIQLAVR NDEELSKLLG DVTIANGGVM PNIHNLLLPK KAGSSKPTEE D

#### HTA3-P

MSSGAGSGTT KGGRGKPKAT KSVSRSSKAG LQFPVGRIAR FLKAGKYAER VGAGAPVYLS AVLEYLAAEV LELAGNAARD NKKTRIVPRH IQLAVRNDEE LSKLLGSVTI ANGGVLPNIH QTLLPSKVGK NKGDIGSASQ EF

MVCNTNILKD VSTKISAFEN VRMIMVEGEM FQVARIHKQL KNRVSAHSSV GATDVVYMTS ILEYLTTEVL QLAENTSKDL KVKRITPRHL QLAIRGDEEL DTLIKGTIIG GSVIPHIH

#### HTA5-P

MSTGAGSGTT KGGRGKPKAT KSVSRSSKAG LQFPVGRIAR FLKSGKYAER VGAGAPVYLS AVLEYLAAEV LELAGNAARD NKKTRIVPRH IQLAVRNDEE LSKLLGSVTI ANGGVLPNIH QTLLPSKVGK NKGDIGSASQ EF

#### HTA6-P

MESTGKVKKA FGGRKPPGAP KTKSVSKSMK AGLQFPVGRI TRFLKKGRYA QRLGGGAPVY MAAVLEYLAA EVLELAGNAA RDNKKSRIIP RHLLLAIRND EELGKLLSGV TIAHGGVLPN INSVLLPKKS ATKPAEEKAT KSPVKSPKKA

# HTA7-P

MESSQATTKP TRGAGGRKGG DRKKSVSKSV KAGLQFPVGR IARYLKKGRY ALRYGSGAPV YLAAVLEYLA AEVLELAGNA ARDNKKNRIN PRHLCLAIRN DEELGRLLHG VTIASGGVLP NINPVLLPKK STASSSQAEK ASATKSPKKA

#### HTA8-P

MAGKGGKGLL AAKTTAAAAN KDSVKKKSIS RSSRAGIQFP VGRIHRQLKQ RVSAHGRVGA TAAVYTASIL EYLTAEVLEL AGNASKDLKV KRITPRHLQL AIRGDEELDT LIKGTIAGGG VIPHIHKSLV NKVTKD

MSGKGAKGLI MGKPSGSDKD KDKKKPITRS SRAGLQFPVG RVHRLLKTRS TAHGRVGATA AVYTAAILEY LTAEVLELAG NASKDLKVKR ISPRHLQLAI RGDEELDTLI KGTIAGGGVI PHIHKSLINK SAKE

# FIG. 7 (A)

HTA10-P
MAGRGKTLGS GSAKKATTRS SKAGLQFPVG RIARFLKKGK YAERVGAGAP VYLAAVLEYL
AAEVLELAGN AARDNKKTRI VPRHIQLAVR NDEELSKLLG DVTIANGGVM PNIHNLLLPK
KTGASKPSAE DD

HTA11-P
MAGKGGKGLV AAKTMAANKD KDKDKKKPIS RSARAGIQFP VGRIHRQLKT RVSAHGRVGA
TAAVYTASIL EYLTAEVLEL AGNASKDLKV KRITPRHLQL AIRGDEELDT LIKGTIAGGG
VIPHIHKSLI NKTTKE

HTA12-P
MDSGTKVKKG AAGRRSGGGP KKKPVSRSVK SGLQFPVGRI GRYLKKGRYS KRVGTGAPVY
LAAVLEYLAA EVLELAGNAA RDNKKNRIIP RHVLLAVRND EELGTLLKGV TIAHGGVLPN
INPILLPKKS EKAASTTKTP KSPSKATKSP KKS

HTA13-P
MAGRGKTLGS GVAKKSTSRS SKAGLQFPVG RIARFLKNGK YATRVGAGAP VYLAAVLEYL
AAEVLELAGN AARDNKKTRI VPRHIQLAVR NDEELSKLLG DVTIANGGVM PNIHSLLLPK
KAGASKPSAD ED

FIG. 7 (B)

ctcactttaa catttttata tagtgacatt tttagtaatc caacgttatt tatatgatta gtaattcatc aaatttatat agtgataaaa ttccacaatg gttgttcaat aaaaatatga acaacacaat agaattagta aaagtgacta tgttaaatca ttttcttcgc tggggtttgg tgggcgagtt ctaaacccat aagcggccca tttacttcgt aaactcaatt cgatttgttc agcgttccaa gcccataata ttattttcaa gggcataaaa taaattgagg tttatatgga aaatttggaa attccctcgt ccagaagaaa ccaacaaaaa ctgcaaaagt tcaagcggtg ggagaaaaaa cttcagatcg tagccattca ttaaattata atcaacggtt taaacctctt cgatccgcgt actctattct tattggtcaa ataacttaat cctccaacat atataaacaa caatcagatt tetetetgtt AATTTCGTCA AGAAAAAAT TCGATTTTTT TGCGCTCTTT GTGGGTTGTT GTTGTTGAAA ATGGCTGGTC GTGGAAAAAC TCTTGGATCC GGTGGGGCGA AGAAAGCTAC ATCTCGGAGT AGCAAAGCCG GTCTTCAATT CCCGGTGGGT CGTATCGCTC GTTTCTTAAA AGCCGGTAAA TACGCCGAAC GTGTTGGTGC CGGTGCTCCG GTTTATCTCG CCGCCGTTCT CGAATATTTG GCCGCCGAGg taaaattaca tcgtcttttc tctctttccc attccgtttc cgatcttatt cgtctgactc tgtttttgcg tgatcgatta cgaatctagg ttgttgtagt tctgtaattg acctaatttt gggtttgttc tgattggttg atggtaatcg agatcatatg aatcgttgta gttttctcgc aagattctaa atttttttca attatggtaa ccaatttgat ttgagttgtt aaagttctca aatttggaaa gtttgatcat gaattgtgtg ttttgaattt gttcaggTTC TTGAATTAGC TGGAAACGCA GCAAGAGACA ACAAGAAGAC ACGTATTGTT CCTCGTCACA TTCAGCTTGC GGTCAGAAAC GATGAGGAGC TAAGCAAGCT TCTTGGAGAT GTGACGATTG CTAATGGAGG AGTGATGCCT AACATCCACA ATCTCCTTCT CCCTAAGAAG GCTGGTGCTT CAAAGCCTCA GGAAGATTAG GTCTTTTAAC ACAATGATAT AGAACACGTC TCTCTTTTGG CTTTAGATCT AATAACCTAA TAACTAGCTA GATGTTTTCA CTTTTTGTAT CTTTGCTTTT TTTAATTCCT TTAGGGATTT GTTTCTTTTCC GTTTCTGTTT CGACATGTTG TTTCTGTTTT TGTGAATATA TGAAAGTATT TTGCgaaata tgaatgataa tgtctttcaa aaatgctgat gccttattca acaagcaaac actgcacttt gtagaagtat aaagattttc tttgttgttg atagtaatag tacaagaaag aaaaaaacac aaaggattat tattctatgg ccaacaagat tgaaaaaata tgaaaagaaa gtatttctaa gactaaa

FIG. 8 (A)

TIMA C					
HTA2-G	cagccaccac	aatatqtcat	acaacttgca	actgttatta	tccaaattta
		ctaaaaaaaca	aacaataatt	attataatut	cca grang
aacccacata	cctaacttct	ttgaaatttt	gataaaaagg	aaaatacata	tgtacaagaa
ataacttctc	aatttatttg	aaccaaacaa	tattaaatti	Lgggccagac	aacgccaaaa
T	Lakkatatt	taacaagccc	aatatagccc	atataacaat	ccattgaaat
		dadaaadcad	atagacacac	gaatctcaaa	tcacgtccct
	tata2a	aatataaatt	arcdatccat	quaququuau	accaccaga
		anatatta	arcarcaluu	Cadaccccac	cgacaccac
agaaatattt	tttgacagaG	ACA A ATTTCT	CAGTTACGCT	TCATCCTCCT	CTAAGAGATC
tattgttatt	CTTGGGTAGT	AGAAATITCI	GCCGGGTCGG	GGAAAACAAC	TTGGATCTGG
TTTTTTCTAT	AAGTCTACTT	AGAGAGAAA1	CAAGGCTGGG	CTTCAATTCC	CTGTTGGTCG
TGCAGCGAAG	TTTTTGAAAG	CICGIAGIAG	CGCCGAGCGT	GTTGGTGCCG	GAGCTCCGGT
TATCGCTCGA	GCCGTTCTTG	Z Z WZ CCTCCC	CCCTGAGata	atcagtctct	tctatttatc
CTATCTCGCC	tttactcttt	AATACCICGC	cactantest	agettgeate	tagggttctg
acctgtttaa	tttactcttt	ttaccgaatt	adacygetae	atttggaata	ttttagaatg
gattttagat	ttagtttgtt	ctttcgttaa	gaaaattgt	ccatttttt	tatatagttt
cattagttcc	ttagtttgtt ttgtgtttct	ttttttttgg	gaaaaaccgc	gaaattaggg	ttaaatttqt
tgagctcaat	ttgtgtttct	ttgtgctcat	actgettace	actotcaatt	gtgttctcaa
tccttactac	tttgagttat	catagttggc	tetattagae	tatotoaaca	tatctactta
attcgaaaaa	tgttgttgtt	cacttagttt	egcercegga	CCTTCCTGGG	AACGCAGCGA
ggaactgaat	ttggtgcgct	cactttctat	aggiaciiga aacacammca	CCTTCCTGTG	AGGAATGATG
GAGACAACAA	GAAGACCCGT	ATAGTTCCAC	GACACATICA	TCCACCACTG	ATGCCTAACA
AGGAGCTAAG	CAAGTTGCTT	GGAGATGTGA	CAATIGCIAA	GCCTACTGAA	GAAGATTAGG
TCCACAATCT	CCTTCTCCCC	AAGAAGGC'I'G		CACATATTCC	TTAGGATTGT
TTCATTACGA	AGATAGGGAA	AGCTGGAAAC	TGGTTGATAT	CAGATAATOC	∆CTAGTTGTT
			AATGGAAGCI	AUTOTOTION	ACTAGTTGTT
AAGGTTACCT	TTGTTTCACT			. AliGiiciai	TTCagtcttg caatttaaat
actccacttc	tttagcattg	ttcactgatt			
tccttcgata	agctacacga	aactgcacac		gtaactigtt	tttaaacttt
ttgttttgtt	ttgtttttgg	, ttgaaaactc	: gagaaaaaaa	gaatcagtag	acccataatc
acagaaaagt	: caagccacca	agcgattcga	ı cataqacaqı	ggagaagtga	cgagattgag
agaatcgagg	cgagagagag	r agagagacag	ggacgattes	gillagaget	ctcgtatgag
qtatatttca	atttcgtttt	: cggcgatatc	: ttgtgtcgca	aat	
-					

FIG. 8 (B)

HTA3-G				<del></del>	attatettaa
gtttgacttt	ataaaaacat	gcagaaatgt	acaaagaata	tatacatata	tastascasc
		at at a 2 2 2 C C	acaccactat	Caacccac	000.0
		++++~~++~~	cccarunaa	auctuctuc	90000
	L	ccatttgatt	daaatttatt	LLatyaccou	acaaa
		antattaarr	FFFILLCada	CCGaaccaaa	
	L-L-L	ヘヘナナナナココクコ	caaacautaa	LUGUCULAGG	uuu0000
		22222277	COCGAGAGG	Lacaacygeg	00005-555
		2200225022	aal.ccattat	CCCaacgooa	
	-+aaaa+1	$\Delta \Delta T C \Delta C T C C A$	CTCACAAAAI	CCICACCAI	0101.11
	acamommes.	$\Lambda$ $\Lambda$ $\Pi$	TAAACAAAAA	AIGAGIICCG	0000000
	***********	CACCAAACCC	AAAAGCTACA	AAGICCGICI	CICOMICIE
		CCCTTCCAAG	AATUUTAGA	TICCITAMO	CCCCT1222
	OBBCCBCCCC	CTCCTCCCGT	TTATCTCTCC	GCCGIICICG	Millicoroco
		++a+a+++aa	FAFFFAGECE	LLLague	acgacgagaa
CGCTGAGgta	acaaacaacc	actagatttt	traatattta	ccgaatcttt	gattttgatt
tcactcgtaa	ttgatatate	gagtctgatc	tettatatga	tattaatata	atcattagGT
tgatgttaag	gtgtcttcta	CAGCAAGAGA	TAACAAGAAG	ACACGTATCG	TACCACGGCA
ATTGGAGCTA	GCTGGAAATG	CAGCAAGAGA	CCTTACTAAA	CTTCTTGGAA	GTGTAACAAT
CATTCAGCTT	GCAGTGAGGA	ACGATGAAGA	GC11AG1AAA	CTCCCATCAA	AGGTTGGAAA
TGCTAATGGA	GGAGTTTTGC	CCAACATTCA	TCAGACICII	TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	TAGCTTGTAA
GAACAAAGGC	GATATCGGAT	CTGCTTCTCA	AGAGTTTTAA	TITIMITT	CAAAAACTGT
CATAGACATG	GCTCTCTGTT	CCACAATAGT	TTTGGTATTT	1CAIGIIACI	TTCATCTCTT
		<u>አጥጥሮርርጥጥጥር</u>	AAGAAGTGAA	AIAGIIAAAI	1101110101
		· ጥጥベአአጥአሮልል	CTGCTAATAG	GIIIGGCIII	AGCCELLOGIA
mamaan nama	, ACACTCTTCC	· ттСттТGTGA	GAATGTAATA	ATGAGACAGI	GIIGGAMMET
	mamora cocoro	· ∼™™™™СТСАТ	' 'I'ctataaac	cyayccaccy	cagaacaca
tt constact	. acactcaaat	ctcaaaaaat	acattagaag	attatagtet	catgactatg
autagaagga	gacttgagtt	tgtattacct	tgacaatatc	tgagtatag	
49-994499*	- 55-5	_			

FIG. 8 (C)

## HTA4-G ttaagactga taagtatcaa caagcgaagt tttgatttgc ttgttgaagc tagtctcgga cttcaaatga cacttgatat gttcatacat gtaacatgtg aagaagaact tattttggaa cccaaagaca tgaatagttt gaaaaccttt ctcatgagaa tatgcaatgt taagatcttt tacttgtctt atgacactct ataggtcagt cccatctttt ttgttaaagt ttacaattga caattagtta gtgatgatat agttaacttg gtttttgttt cacgaactta atgactgaag ttaaacaata caggtattca acaacctgat tcagttaact attitgccat gtatagagag ggaatcactg ccaaatctac tcaagaattt tccaaatcta gaaaccttct tctatgaagt aacatacaca ttcttgatat taacaactga catgatttta cacagtaata aattttgaaa cggtctcatt ttatgtttcA TGGTGTGCAA CACGAATATA CTAAAAGATG TGTCGACGAA GATAAGTGCT TTTGAAAATG TTCGGATGAT TATGGTGGAG GGAGAGATGg tatgatagga gaagtetttt geteatagaa gtagagtget aacagtteae aatgaettta caatetatgt ggctccttga aacaataaac tatggatgtg cataactaat ggacaatctt catatttagg aatgactaaa atatcttaac taatgcttaa acactcatgt gtcaccaaat aacaatacat ggaacatgag tgtcaataat gaccttgtat tgtaatgggt cgctggttta gttgaagttc cagtagcaca taccgaaact acattccttt tttatggagt aattctgttt taggatattt ttagggtttt tggattttgt ataagacaaa aaaaaacaca aacacaataa gctacttaac tagaaaataa catcatcata taatttgact aaataaacaa atcacttctt cgtggttttg ttgatgagag acatgtggat gtgagagact actccttatc caccaattgt tactttgata aatggatcaa gatccctatc tcctgcgatc accaactata aatgcattag agtaatcctc tttattttct tatcattgat tgtgtttttc ggtaactcaa taacctatga agttaggcac tctaggattg aagccatgta gtcaacaaca atagcaccaa gtcgaccatg ttgtagatac tctagtcttg agttgcatgt gaatacgacc cactagaaat tgaaataaac aaagaaattt cattttttgt agtataattt gataaaattt tatactgata tigtttcttt gtttctttca gTTTCAAGTG GCTCGTATTC ACAAGCAACT TAAGAACAGA GTTTCTGCAC ATAGTAGTGT TGGTGCGACT GATGTTGTCT ACATGACTTC AATCCTTGAA TACCTAACTA CAGAGGTTCT TCAGTTGGCC GAAAACACTA GCAAAGATTT AAAAGTGAAG AGGATAACTC CAAGGCATTT GCAGTTGGCG ATCAGAGGAG ATGAAGAGCT TGACACACTC ATCAAAGGAA CAATTATTGG AGGAAGTGTG ATCCCTCACA TCCACTAGtc tcatcaacaa aacaaccaag gagtgatttg tttcttaagt taactaatat gatgtgatat gctagttaag tagcttatgg tgtttcagtt actctagttt tggatcggag aagtagttta agtgttaagt cttgagacat cataatttta cgtctcatct cgtaaacgat aggagaagtt ctttgctcct agagttttgg tgctaaacaa ttcacagtga tatgcattcc atgtggctcc ttaaaacact caaccatgca tgcacaagca gtggaccatc ttcatattca tgactgacta aaatattgtc atcaatgctt actaatatgt caaattgtag taactcggtg gtttaattga agtttcattg ttatatatat ggcgtatagg cctaaagttg tatgaagttt tgattgatga gttaagacat cgtattatat aaagtaggat tttcaagtta ctaactcaac tgattaagac acaagtcaag tactttga

FIG. 8 (D)

## HTA5-G agtaaaagga gatgtacgaa ccatagatca cataataatt gaaagggtag atgatctgcc acgttggcaa tccgtgtgat ctaaagtcta acaaatcaca atcaatctta gtagcctata tattgattta ttcttgttgc ttgatcaata aaggttacat catagaacta aaatcatatg aaaccgaatc gatcaaccct ggccatcttt taaataacca tcaatacatt gggatgatca atccacaata aatgtattga tgtaaattaa aaatatgaac ttgtaacaga tcaagattca gggtctaaaa ttatagaaag cttaataatg gaggactatt tcactaaaat cacttttcgt ttgtacatta ttttcaaaaa gtaaaaggag atgtacgaac catagatcac ataataattg aaagggtaga tgatctgcca cgttggcaat ccgtgtgatc taaagtctaa caaatcacaa tcaatcttag tagcctataC ATATAGAGAA GAGCAAAACC CTAAAGCCCA CTCATCTTCT CAATTCCCAG ATCATCTACA ATAGTCATTT CTCTTCGATT TCTTCAAACT CTCATCAAAT CGTTTATCTG TTCTAAATTT CGAAGAAGAC GATGAGTACA GGCGCAGGAA GCGGAACAAC CAAAGGTGGC AGAGGAAAGC CAAAGGCCAC CAAATCCGTC TCTCGATCAT CTAAAGCCGG TCTTCAATTC CCCGTCGGAA GAATCGCTAG ATTCCTCAAA TCCGGTAAAT ACGCCGAGCG TGTCGGTGCC GGAGCTCCGG TCTATCTCTC CGCTGTTCTC GAGTACCTCG CCGCCGAGgt aatttattt tottgtotto caatttggtt ttcaatttcg atttggtcac atctgaattg gatcttgtac tgatttgatt ttgatttggt ttgggttgat agGTGTTGGA GCTGGCGGGA AACGCAGCAA GGGATAACAA GAAGACACGT ATAGTACCAA GACACATTCA GCTTGCAGTG AGGAACGATG AAGAGTTAAG CAAACTTCTG GGAAGTGTGA CGATTGCGAA TGGAGGAGTT TTGCCAAATA TTCATCAGAC TCTTTTGCCA TCCAAGGTTG GCAAGAACAA AGGAGATATT ATTCGGAACT TGTAAAATAG ACCCTGATGG TGTTTTTTGG GGATCAAATT AGGTTTTAAA GCTAAGTATA TTTGGCTTTT GCCTAAGTAT GTTTAATTAG TGAATGATAT GATATTTCGG AACGAATCAT GTATCAATGG AActgaatta atcgatatat caacccagaa acattttgaa acacaaacta tgcatacttg attctttatt gcagatacat gcaactcatg gagcctaata ctaaacattg ctttgatcat gtttcaattt aaccagactc attttttaat tcacccaggg agtaaaactc attaggtttt gggcctaact gcctcagtca tggtaatcct gaattaactt cactaagtta ccctcatctg ttggttcgca cctgaattag ctcgctaaat taccttcatc

FIG. 8 (E)

#### HTA6-G

gtctataaac tattaaactc tagggtttaa tatgtacaaa ttctcttagg ctacttttga ttaggactcc cttgtgaatg tcaaaacata atgcgacccc aaaatatctt tataagtata attgttaatc ttttgattct aaaatattgt tcattgtttt ccaattaggg cttcaaagac tettgagaag catcattaaa catttaaatg teaatgaeta aetttacatt taacatataa ttaatctacc gaaaattagt gtaagttgca agaaattatc caaaaaccca aaataaagca agegetaaac ttttaaaatg ctacaaaaaa actggegeeg tttcaaaaag catacetett tttgattggt taatacatag tcacgcggat cgtgctttat ttgaacatcc accgtcgata gactaaatcc aacggataat aatcctctcc cttctttttt tttcatttac ctataaatat cacagagtac ccttcaactT TAAATCACAA ATCTTCAACT TCCGATACTT TCAATCTCTC TAAACTCTCA ATTTCAGTAA TCGATAACCG TAGCAATGGA ATCCACCGGA AAAGTGAAGA AAGCTTTCGG AGGAAGAAAA CCACCTGGTG CCCCAAAAAC CAAATCGGTT TCGAAATCGA TGAAAGCCGG TCTTCAATTC CCAGTGGGAA GAATCACTCG TTTCCTGAAG AAAGGACGAT ACGCTCAGAG ACTTGGTGGT GGTGCTCCGG TTTACATGGC CGCCGTTCTT GAATACCTCG CCGCAGAAgt aagtgtttcc cgatctggat tttctagtaa gattttttt ttacatttca aaatcaattt totgattoga atttattgat otcagGTTCT GGAGCTTGCT GGTAACGCTG CGAGAGATAA CAAGAAATCA AGGATAATTC CGAGGCATCT TCTTCTCGCG ATAAGGAACG ATGAAGAATT GGGGAAACTT CTGAGTGGTG TCACAATCGC TCACGGTGGT GTTTTGCCTA ACATCAACTC TGTTCTATTG CCTAAGAAGT CTGCCACTAA ACCAGCTGAA GAAAAGGCTA CCAAATCACC AGTCAAGTCT CCAAAGAAAG CTTAATCTGC TAGAGTTTTC GTTGCTAGTT TGTGTTTGAG CTCTGGTGAA TGTAGAAATT TGAAGCTTTT GGATCTTAGT TTCTATGTAT TTGGTGATTT AGAATGTTGT TCAAAATCCT TTTCCTAATC ATAAGAATTT ATGATCTATC TATTATACGC TTCGTCTAAT CTTTTggtcc actcgtcgta atgtcattag tgaatattta ataaacaact ttgtcatcga cattaacgaa cccttttatt cgctgtgcta aatttttctt ttaggtgaag ccaaatctaa catgttctct tctctctttg ttcgttgtaa ttccataaca tetecattae gatgttttge gattegagga tettgtteta aattatt

FIG. 8 (F)

HTA7-G					t t a
cgtggtatat	acatacacgt	cgttctttcc	tcattttaag	tetteating	teatggaget
	anattanata	tottaaacto	tctttcttaa	tcacallill	Lycactiate
	aaaaaaaat	ttaaata	attttttttt	CCLLdallll	ccgaaccacc
	ctactctaat	tetetagata	ttttaaataa	tagtaataat	Cigiligateaa
	anne anne a	taaagetgat	tatcttqtaq	aacgigiggg	gaatgaatet
agatast	atcactcaad	tattatta	caccttcctt	ttacaacacc	Cacgigiaai
atantacaaa	gaagtcatta	cgaccgttag	atcaaaqcca	acaagattta	accitaacgg
	ttactacacc	gatcgccaac	atagcaatac	gtggtatala	Catacacycc
	cattttaacC	ΔΔΔΤСGΤΔΔΑ	CCGCCACAAA	ACCGAAAAAA	ACACTAATIG
maammmaaca	ጥጥአርአጥጥርልጥ	TTGTATTTTC	TTTTGGAGCT	T.L.T.GAACAA I	GGAGICAICA
CARCCARCCA	CCAACCCAAC	GAGAGGAGCA	GGAGGAAGGA	AAGGTGGAGA	TAGGAAGAAG
$\lambda$ CMCMM $\lambda$ CM $\lambda$	<b>አ አጥርጥርጥጥΔ Δ</b>	AGCTGGTCTT	CAATTTCCCG	TTGGTCGTAT	CGCTCGTTAC
mman nan na	CTCCCTACCC	TCTCCGATAC	GGTTCCGGTG	CTCCGGTTTA	CCICGCCGCC
	ACCTACCCCC	CGAGGtatat	tcaatctcag	atctcgttgc	attttgaatt
	atatatatat	tagatetgtt	taattttqaa	gttctaatga	accgaaccgg
+++~~+++~~	CTACTTCACC	TAGCTGGGAA	CGCAGCGAGA	GATAATAAGA	AGAACAGGAI
NA ACCCURACC	$C$ $\Lambda$ $T$ $C$ $T$ $\Delta$ $T$ $C$ $T$ $T$	TAGCGATAAG	GAACGATGAG	GAATTGGGGA	GATIGUTICA
maaa amma am	አ <b>ጥጥር ርጥ</b> እ ርጥር	GTGGTGTTCT	TCCAAACATT	AATCCAGTTC	TTCTTCCTAA
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	CORTOTTOTT	CTCDDCCGCD	GAAAGCTTCT	GCTACCAAAT	CICCIAAGAA
CCCTTC ATTA A	አርአ <u>አጥ</u> ልርጥልጥ	CGATGTTGCT	TTTTGGTTAT	ATTCGGATCT	TAGATGAAGA
7077077077	$C \Lambda \Lambda C \Lambda \Lambda \Lambda C \Lambda \Lambda$	CTTGTTTTT	GTTTTAGAGG	ATTIGIGIAG	GIAICIGAAA
manmanara ara	ጥጥጥረጥጥጥጥርር	TTTGTCTTAT	GTAAAAACCA	TGGGAAGATG	ATTAIGITIG
mma a ccca a a r	ምምርጥል አጥርርና Δ	ΑΑΤΤΑΑΤΤΑΑ	GTTCTGGGAT	TAGTaacttc	attigittaa
++-a++a+a	aatttcatac	ttattaattt	aaacaattta	qqtggattaa	LLydaalygt
+++aa+atac	acatogaaag	attcagtaca	gttaatgaca	ttaattaaag	Lagalaalaa
+	catgacatta	attaagaaaa	tgattgttca	aattgggctt	igitiggget
tagttagtag	acccattaga	atttatqttc	ttggttcatc	tacgagattc	Eggaaaayyy
~++++~~++	tecaataaaa	- tttagaattt	aaacaaqacq	cgatttcgaa	LLLLGLLCLL
gttttggttt	attatttaat	ttcaatcttq	gatttgcgat	gatgaatttt	ctggttcgat
uLaydalla	4669666996				

FIG. 8 (G)

HTA8-G					
cacacttaaa	tctttctttg	tttaataaaa	agtataatca	aaaatttgaa	agagagaata
catttcatta	++tttttaa	ataccatcat	gagaggtggt	atgaatatcc	actatattt
aactacaaat	cttcttttga	ataatttqca	attttatgtg	atataaatti	LLagiaaaac
aattattttc	caacaacaca	agatttgaac	gaattttgta	aagatateta	aalalaaall
taacatotto	acccaaaaaa	tqaaqaatta	taacaattta	gaaaagccgg	CCCaacaaga
tacacaaran	ctaaacaaaa	tccaacccaa	caataagtcc	aaactttaaa	ageteteeg
cacaattttc	gaggatcccg	ctctcqtttt	caggtacttc	cctctctgag	ctagggtttt
አ አ ጥጥር ር አ ር ርጥ	CTCTCTTTTG	TCTCTGTATC	GATTTTCTCG	CCGCGAATIT	CGAATAGGTT
CTTCACCATA	AGCTTGAGAT	CTTATTTCTC	TACTGTTCTT	TGCTTCTTCT	CTATCGGCCa
attatattat	ttgatttgga	cgacggatct	ggaaattctg	aaattttgtg	aagetettt
a++++a++	aatttatata	GATATGGCTG	GTAAAGGTGG	GAAAGGGCII	CIAGCIGCGA
ACACCACCCC	AGCAGCTGCA	AACAAAGACA	GTGTTAAGAA	GAAAICCAIC	ICICOCICII
CTCCTCCTCC	TATTCAGGta	tccctcaaac	cctaqctcct	tttttgagaa	ccgagtggct
aggagtttga	atgtgcgtta	aatttttta	attatqttca	attgtgaatt	gggaaccaga
+++atattc	attetatatt	taatqcattt	ttqqqaaatt	getteetete	Lyacticegy
aaatatottt	tactctgtgt	ttcttcatta	aaqttacaat	gegegeelga	Laciggacci
ttattatata	tatgactcta	taccaaqtaq	cattatttt	ggtgtgtttt	actitudegac
tataatataa	tagettgeat	attctatacq	qttqatacac	acaageriga	LLLLLLGLGLG
tacacttett	ataattacat	atgaagaaaa	acagtgctat	ctatctagat	tttagagtaa
+++atataca	atagagtact	accaattqat	actgagcctt	aatgggagca	LCLacingic
ctctctatat	atatattata	gaaatctaag	ccaaacattg	teetgelall	gicactage
tacttttaga	attetteett	gttaaagccg	aattgtacat	accallgaal	Ccatgctace
tatatggctt	attactacaa	tatctttat	tatgataatc	acttgatacg	Ligidatate
tatctataaq	atgtagtaag	tgaatgatca	agcaaattaa	aggactgtgt	ggilagilla
agtgtcttat	taatatatat	ctatctacaa	gaagatctgt	ctcagiciga	LLaalgggaa
acctttctct	gtgccctaaa	gttatgtgct	tattttqttt	tctcaatgtg	gracicitie
agTTTCCAGT	GGGTCGTATT	CATCGTCAAC	TCAAGCAAAG	AGTTTCAGCA	CATGGAAGAG
TTGGTGCCAC	TGCTGCTGTT	TACACTGCAT	CAATTCTAGA	ATACTTGACT	GCTGAAGTAC
TCGAGTTAGC	TGGAAATGCG	AGCAAGGATC	TCAAAGTGAA	GAGAATTACA	CCAAGACATT
TGCAGCTTGC	AATCAGAGGA	GATGAGGAAC	TTGACACTCT	CATCAAAGGA	ACCATTGCAG
GAGGAGGTGT	GATCCCTCAC	ATCCACAAGT	CCCTTGTCAA	CAAAGTCACC	AAGGATTGAG
TTTCGCTCTC	TGAGTCCTAA	GTCTCTATTA	TACTATGTGC	TCTTTTCTAG	ACGCCCTCAT
GTGTATATGG	GTTCATTGTA	TCTCTTAGGT	CTCTCGTTTT	AGACTCATAC	TCTTGTTATT
TTCCTDDTCC	TTACATGATT	' GAGGatgatg	gttcttgctt	tcttggtttc	ctatactgtt
gcatgccct	cttctagcta	accccggaca	atagaaatcc	tcgattagat	gatgaaaacc
attcaacatc	tatgtagcaa	ctgatgacaa	cagcgtttga	ttgtttcaca	a

FIG. 8 (H)

HTA9-G					
ttagggacga	atttgtgatt	tatgattatt	tgactttaga	ttgggcttgg	getttttteg
caaattaaaa	tataagggta	aaatcqtcat	ttgacagacc	gacttgtctc	Coldiality
addaaaacat	cttttcacat	caacaaaqaa	qqaaaaaccg	cagagaaacc	accigatace
taagctaaac	tgagcgtaca	aaaagcctct	atatgtctta	gttcatgatt	Egglalgill
tatttccaga	ctgaatgatt	atacagagaa	aacaaacaaa	gateteeete	Eccletting
22+0222202	tagatattaa	aatttaatag	ttttctttca	agtgtcttt	tcaatattga
2012221112	gggaggaatt	tataatttat	gattatttga	ctttagattg	ggcttgggct
++++cacaa	attagggtat	aagggtaaaa	tcatcattta	acagaccgac	Ligitation
atatataaaa	assacatetA	TCGGGAGACT	CCTCTTCGAG	CTCATCTTCI	ICICICICI
መመመን መረጥጥጥር	$GTTGTGCG\DeltaT$	CTCCTTTCTC	TTTCAATCTC	CAAGGATITI	ACIGIGAGAI
አጥጥጥርGCGGG	AAAATGTCGG	GGAAAGGTGC	TAAAGGTTTG	ATTATGGGGA	AACCCAGCGG
TACCCACAAG	GATAAGGACA	AGAAGAAGCC	TATCACTCGT	TCTTCTCGAG	CIGGICICCA
Catagattat	aatctccctc	acactctaaq	tcttccgtgt	ctgtttctt	gggaalcgaa
ataatattat	acacctgaac	gattagtaga	tcqcqtttaa	gtggtagatc	gatgagattc
tagactagat	ttggtaattt	cagetgagaa	ttaqaqacat	tgggatgcga	gattiggtti
tatattatat	tatctactaa	agaattgttt	cattaaqctt	ttatggttga	tattgaaccc
gatetttgat	ttcacqqaqt	cttattatta	cagctacctt	gtgaattgaa	tteggagttt
+++++a+aaa	gatttattgt	catatatgaa	atqtttctgg	gagcaarrya	gatttgagta
ttastttagg	ttccattatt	gtggctaatt	gaatttacat	tgtgtgcagi	ICCCAGIIGG
maccccmcca m	CCTCTCTT Δ	AGACAAGGTC	CACTGCTCAT	GGAAGGGTTG	GAGCAACIGC
አ ር ር ጥር ጥጥጥ እ ር	ACAGCAGCAA	TATTGGAGTA	TCTGACTGCA	GAAGTTTTTGG	AGTTGGCTGG
TEN A CCCCACC	$\Delta \Delta GG\Delta CTTGA$	AGGTGAAACG	TATCTCGCCG	AGGCATTIGC	AGCTTGCGAT
ТОСТОСЛЕЛТ	CACCACCTCG	ATACTCTCAT	CAAAGGAACT	ATAGCTGGTG	GTGGAGTCA1
CCCTCATATC	CACAAGAGTC	TCATCAACAA	ATCCGCCAAG	GAATAGGAC'I'	TTTTTAGT IA
CCCCCTTTCT	тстстсттсС	TTTTCTGTTT	TCTAAATGTT	TTTAAGAGTT	GTTGTTTGAT
$\lambda \lambda C \lambda T C C T \lambda C$	AGAAGCTCTT	TTTAGGATCG	TTTGCTATTG	TTCGTTCGAT	CAGCGTACTT
тстсттасас	ACGCCAGTCG	ATTTATCTAT	CTTTAAAAAT	GTATTCGAAT	GATTATCCAA
እ እ እ ሮሮ እ ጥጥጥ ሮ	TGActaccta	ccttactaat	ttattcgctg	gagaagcttg	aaagcaaatt
cattaggaag	gatttgtatt	atctctaaat	agaattcata	tatacatcat	acataagtaa
222462626	tttatattta	agaaaattag	gctgataata	ttcacttggc	ctagitgacg
tcgatgtgat	tctgaagcaa	agttctttgt	agcaaatctg	gtgggagttt	taatcccttt
aagaatacac	tgatgcctga	ttt			
	5 2 5				

FIG. 8 (I)

HTA10-G					
attcqaatta	tgaaaatcaa	aaaggaatga	agcgggaaca	aaaccttggg	gatttagttt
gaatcgtgat	gaagaaggaa	gatcagagct	tgagggagat	tcgaaatttc	ctcgcttcat
aacaaaatct	gagaaataga	tttqaaaaac	agacaacact	aggttacaaa	aactgttact
coatosatas	aaaaagagga	ctttttcaaa	tcttcacaca	caaatttcac	aaagaacccg
gattgaattt	ttgaaaattg	aactctttaa	taaaatgtaa	aacgtttggg	ccgaaaaaag
220222222	caaaactgta	aagaggcaaa	qaqqatattt	tggtaattca	ctctgacgcg
gatcctgaat	ctcgaattat	tcaccattaa	ttataacatt	atctaacggt	gataaacagc
gatececeta	atttcttctt	attoottaag	acqaatctaa	aacagtatat	aaactctgga
gaagatggag	agagtccatA	ACAACAAATT	CGATTCTTAT	AACTGTTTCC	CTCTCATCTT
TACACAAAAG	$T\Delta TTCT\Delta \Delta TC$	GATTTCAATG	GCGGGTCGTG	GTAAAACACT	CGGATCIGGG
TCTCCCAAGA	AGGCAACAAC	AAGAAGCAGC	AAAGCCGGTC	TCCAATTCCC	TGTGGGTCGT
አጥር <mark>ርርጥርርጥ</mark> ጥ	TCTTGAAGAA	AGGCAAATAC	GCCGAACGTG	TTGGTGCCGG	AGCTCCGGTT
TACTTACCCG	CCGTTCTCGA	ATACCTCGCC	GCTGAGgtaa	ttcctcttcc	ctattcttca
aattttccat	cttttagttc	aatttctata	aaccctaatt	ttgactgatt	ttggggaaat
+++<->	t aggTATTGG	AATTGGCTGG	AAACGCAGCG	AGGGATAACA	AGAAGACGAG
$C\Lambda$ TTCTTCC Λ	AGGCATATTC	AATTGGCGGT	GAGGAACGAT	GAAGAATTGA	GCAAATTGCT
TCCACATCTC	ACTATTGCTA	ATGGAGGTGT	GATGCCTAAC	ATTCACAATC	TTCTTCTTCC
TAAGAAGACC	GGTGCTTCCA	AGCCATCTGC	TGAAGACGAT	TGATTAATCA	ACCAAATCCA
СТСТСТТСТС	TTTTTTGAGT	TTTTAAGGCT	TTTTAAGAGT	AATTTAGATT	AGATCTATGG
TCAACAAAGA	ATCTATCTTC	TGTGTTTTTT	GAATTGAATT	GAATGTTCAT	ATGCTTTCAA
TTTCTTATGG	AATCAAGATT	TTAACTTTTC	Taggttttcg	agttatgatg	atgaaattct
tagtettata	aatcactaaa	gacttgggat	ttttgattgg	ttgacataaa	gaatggactt
ttgagttaaa	tttgggaaag	ctactgggaa	tgacatcatg	agaggtgtat	aattgagcaa
ctatgacata	tattaaaaga	gatctgaagg	attgatgatg	attggtgggc	caataatg

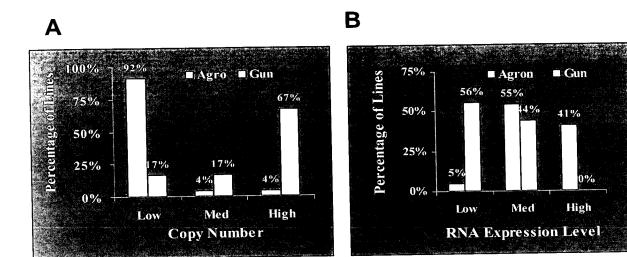
FIG. 8 (J)

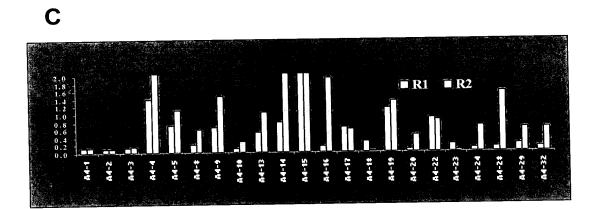
FIG. 8 (K)

FIG. 8 (L)

HTA13-G					tateataaag
ttaatacgac	atgctaaaaa	ttgattaatc	atgtttagaa	aaatatatac	tatgataaac
atassattat	gtcacacaat	tttgatgaat	gtatatacca	catttccata	ttatacgttt
+	attttcataa	attttaaaat	tattcataac	atteattaaa	accagacgeg
totoottoog	aaactaaaaa	tatcattaat	ctactatttt	agtagttatt	ttgcgaaaat
atattaaat	tacaaaatat	tttcactatt	taaatcatqt	cgattatacc	Cactgaaggg
+ a + + + a a a + a	aatcccaatt	chaacaatga	attcaggagt	ataaaaacyc	aaacccaagc
	tasaccatca	atcataatct	aatccaacqq	cagtaacatc	gattegegeg
	attagataag	aatcactcaa	ccatctctac	acagtatala	Laalaaccaa
agaggtagt	cttacacttA	TCTTAATTTC	CCTCGCATTG	AGAATTICA	ACITITICIA
TOTO TOTO TOTO CO	$C \Delta \Delta \Delta T C \Delta C \Delta \Delta$	ATGGCGGGTC	GCGGCAAAAC	TCTCGGATCT	GGCGIIGCIA
አ <i>ር</i> አአአጥርአአር	ATCGAGAAGC	AGCAAAGCCG	GTCTCCAATT	CCCCGTTGGT	CGTATCGCTC
ርጥጥጥጥርጥ እ እ እ	CAACGCCAAG	TACGCAACAC	GTGTTGGTGC	CGGAGCTCCG	GTTTACTTAG
CCCCCCTTCT	$CGD\DeltaT\DeltaCCTC$	GCCGCTGAGG	taattatccc	cttctctccc	tatatetett
+ a a t a t t t a a	atcttcaatt	tcgtaaaacc	ctaatttcta	aattggatct	gttgtgttgt
$\sim CTD$ $TTCC$	Δ TTGGCTGG Δ	AACGCAGCTA	GGGATAACAA	GAAGACTAGG	ATTGTGCCAC
CTCACATTCA	CCTCCCCGTG	AGAAACGATG	AGGAGCTGAG	TAAACTGCTT	GGAGAIGIGA
GICACATICA	TCCACCTCTC	ATGCCTAACA	TTCACAGTCT	TCTTCTTCCC	AAGAAAGCTG
CGATIGCIAA	A CCTTCCGCT	GATGAAGATT	AGATTAGGGA	TTTGTGTTGT	GGTTGTTTAG
GIGCIICAAA	TCTACCTTAC	TCTTTCATTA	GATTAGATCT	GAATTAGTTT	TCATTAATGG
CTAATTAATG	TGTAGCTTAG	CCTTCAAAA	CAAGTATTAA	AATCttatta	ttttgaattg
TGTTGTGTAG	gastagagat	taaattata	acaaactact	tcttcccagt	gatatttgaa
aatccacaat	taacacacat	aggtgatttg	gtaataggag	aattcatagc	catcaagtta
accaaatcac	caagaaactt	ttaattaat	ggtcgagaat	tgaattgtga	aacaactttc
tacagaacaa	geteaaette	ttattanaca	agaacattcc	atctttctcc	actcacaa
aaagtaccat	taccttcttc	LLCLLCaacg	agaacacccc	400000000	

FIG. 8 (M)





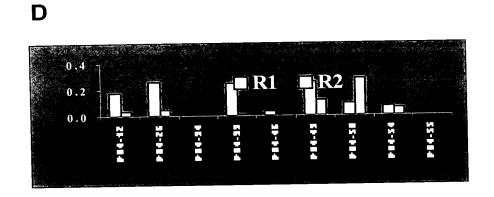


FIG. 9

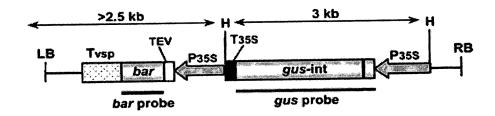


FIG. 10